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EXAMINER

GANESAN, SUNDHARA M

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 112-122 and 132 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US Pat. 5,540,218) in view of Cresswell et al. (US Pat. 4,404,969). Jones et al. describes the invention substantially as claimed, including: an environmental protection hood (10), the hood comprising a manifold (22) having an element external to the hood, for receiving supply of a plurality of services needed within the hood (Fig. 1, lines 46, 24, 64, 58 supply services to the hood), and an element internal to the hood, for providing those plurality of services where required (54, 20, 18).

Jones et al. does not expressly show that the hood is for use with a helmet, or that the manifold includes a supply of air and at least one of a liquid and communications.

Cresswell et al. teaches a hood (10) for use with a helmet (62) and a multi-piece manifold (50-51-52) that supplies air (col. 5, lines 61-65) and communications (col. 5, lines 48-53).

Jones et al. shows providing communications, liquid and air to a hood, but does not show that these services are routed through a common manifold. At the time the

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invention was made, it would have been obvious to one having ordinary skill in the art to run the various hood input lines of Jones et al. through a single manifold, as taught by Cresswell et al. Doing so provides the predictable result of organizing the supply lines in a single interface to make connecting and disconnecting components easier. Examiner notes that it would have also been obvious to include a helmet on the hood of Jones et al., as taught by Cresswell et al. to provide the predictable result of protecting a pilot's head. Therefore, it would have been prima facie obvious to modify Jones et al. as taught by Cresswell et al. to obtain the invention as specified in claim 112 of the instant application.

Regarding claim 113, Jones et al. shows the external element has an inlet (72) for receiving a breathing supply and wherein the internal element is adapted for feeding a breathing mask (20).

Regarding claim 114, Jones et al. shows the external element has an inlet (68) for receiving a liquid.

Regarding claim 115, Jones et al. shows that wherein the services include electrical wiring for communications (58).

Regarding claim 116, Jones et al. shows the internal element is adapted for feeding a demisting jet of air for demisting or inhibiting misting of a window of the hood and/or for ventilating the hood (32A).

Regarding claim 117, Jones et al. shows the internal element is adapted for feeding a demisting jet of air for demisting or inhibiting misting of a window of the hood and/or for ventilating the hood (32A) and wherein the external element has an inlet for

receiving air disposed within the inlet for receiving a breathing supply or vice versa (74, 78).

Regarding claim 118, Jones et al. shows, in combination with a supply conduit assembly comprising a breathing gas conduit (106), an air conduit (104) and a diverter (82) for diverting air from the air conduit to the breathing conduit if a supply of breathing gas is insufficient (Fig. 8).

Regarding claim 119, Jones et al. shows a powered impeller (30) for increasing air pressure in the air conduit.

Regarding claim 120, Jones et al. shows the air conduit comprises a filter (36) for removing contaminants from the air passing therethrough.

Regarding claim 121, Jones et al. shows wherein the diverter comprises a normally-closed valve between the breathing gas conduit and the air conduit (Fig. 8A).

Regarding claim 122, Jones et al. shows a non-return valve (118) to prevent air flowing back from the hood when air is diverted to the breathing conduit.

Regarding claim 132, Jones et al. shows the breathing supply includes the air and/or oxygen (12, 14, col. 2, lines 60-64).

3. Claims 123-125 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US Pat. 5,540,218) in view of Cresswell et al. (US Pat. 4,404,969) as applied to claim 112 above, and further in view of Ansite et al. (US Pat. 5,467,766). Jones et al. describes the invention substantially as claimed, including the manifold comprising a breathing outlet port, and a valve (54, 56) associated with the outlet port.

Jones et al. do not, however, expressly show that the valve opens when a wearer of the hood exhales, and has a mechanism operable by the wearer for closing the port when the wearer exhales (claim 123), the mechanism comprises a cover for the port, the cover being capable of being depressed or otherwise moved manually to close the port (claim 124), or the cover is so shaped as to be readily identifiable by touch (claim 125).

Ansite et al. teaches an exhalation valve that opens when the user exhales (col. 3, lines 16-21). The exhalation valve further has a mechanism operable by the wearer (38) for closing the port when the wearer exhales, the cover being capable of being depressed or otherwise moved manually to close the port (col. 4, lines 42-55), and the cover is shaped so as to be readily identifiable by touch (Fig. 2).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to include an exhalation valve cover of the type taught by Ansite et al. on the device of Jones et al. The Ansite et al. exhalation valve cover allows a pilot to perform the Valsalva maneuver to ease ear pain caused by quick altitude changes. Since the Jones et al. hood is designed for use by crew members on flights; it would have therefore been obvious to include the Ansite et al. exhalation cover on the Jones et al. hood to allow users of the device to perform the Valsalva maneuver to ease discomfort caused by altitude changes.

4. Claims 126 and 127 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US Pat. 5,540,218) in view of Cresswell (US Pat. 4,404,969) as applied to claim 112 above, and further in view of Bonhomme (US Pat. 6,520,177).

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Jones et al. describe the invention substantially as claimed, but do not show the protective helmet having an outer shell and an inner cap, the hood being disposed between the shell and the cap (claim 126) and the hood has a window aperture, and location formations adjacent the aperture for engaging with the cap and the helmet (claim 127).

Bonhomme teaches an environmental protection hood disposed between the outer shell and the inner cap of a helmet (see Fig. 6), and the hood has a window aperture, and location formations (40, 46) adjacent the aperture for engaging with the cap and the helmet (Fig. 6).

At the time the invention was made, it would have been obvious to modify the Jones et al. device to include an outer helmet to cover the hood, and a window aperture with location formations to engage with the cap and helmet. Doing so provides the predictable result of allowing the hood to be worn under protective helmets typically worn by air crew, and allowing the face mask and/or window aperture to be selectively couplable to the helmet for easy donning and doffing. Therefore, it would have been prima facie obvious to include the helmet, cap and window assembly taught by Bonhomme on the device of Jones et al. to allow the environmental protection hood of Jones et al. to interface with standard protective equipment worn by air crew.

5. Claim 133 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US Pat. 5,540,218) in view of Cresswell (US Pat. 4,404,969) as applied to claim 112 above, and further in view of an obvious rearrangement of parts.

Jones et al. illustrates the manifold on the user's vest (Jones et al. 52), in front of the user. Cresswell teaches the manifold is affixed to the seat of an aircraft (manifold 50 interfaces with seat-mounted portion 51, which then interfaces with aircraft-mounted supply portion 52).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to mount the manifold of Cresswell on the hood of Jones et al. Jones et al. teach that the chest-mounted location of the manifold (22) has the predictable result of allowing the pilot easy-access to the manifold to quickly transition between ground and flight operational modes (col. 4, lines 9-13). One having ordinary skill in the art, therefore, would have found it obvious to mount the manifold on the hood of Jones et al. to provide the same benefits of easy access when transitioning between ground and flight operations. Such a change requires only rearrangement of parts already existing in the Jones et al. and Cresswell et al. devices, and provides only predictable results to one of ordinary skill in the art. Jones et al. already teaches a body-mounted manifold, and one of ordinary skill in the art would have found only predictable results from mounting the manifold directly to the hood, rather than the vest, as the hood is similarly easy for a pilot to reach to connect and disconnect. Therefore, it would have been prima facie obvious to modify Cresswell and Jones to obtain the invention as specified in claim 133 of the instant application.

Response to Arguments

6. Applicant's arguments with respect to claims 112-127 and 132-133 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUNDHARA GANESAN whose telephone number is (571)272-3340. The examiner can normally be reached on 10:00 am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LoAn Thanh can be reached on (571) 272-4966. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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